

Unintended Relevance: The Role of the Stryker Brigade Combat Team in the Decisive Action Environment

A Monograph

by

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Abstract

Unintended Relevance: The Role of the Stryker Brigade Combat Team in the Decisive Action Environment, by MAJ Walter C. Gray II, US Army, 41 pages.

The Army is in the process of fielding a new vehicle called the Dragoon, armed with a 30mm turret on top of the Stryker to provide additional lethality to the Stryker formation. The fielding of the new Stryker is in response to an Operational Needs Statement submitted by the 2d Cavalry Regiment in Germany as a reaction to Russian aggression in the region. The upgrade of the 30mm is also the initial step for the formation's modernization as a part of the Mobile Protected Firepower Concept and Combat Vehicle Modernization Strategy. However, the upgrade of the 30mm potentially may change how the SBCT was intended to be employed in decisive action by changing the platform from a carrying vehicle to a fighting vehicle. The SBCT's role in decisive action is to remain the medium force that can move quickly by means of a light armored vehicle and fight dismounted in complex terrain.

To determine the SBCT's role in decisive action, several questions needed to be answered. First, a definition of decisive action needed to be determined. Second, determining why the SBCT was created and how was it to be employed. Third, anticipating future conflict and threats the Army will have to face was considered. Fourth, analyzing the Army's future upgrades to combat vehicle formations and what implications will the 30mm have on the SBCT.

Decisive action doctrine requires SBCTs to operate as a dismounted force for two reasons: First, it is how the SBCT was originally designed. Second, future conflict requires the dismounted capability the SBCT provides to win against most likely anticipated threats. Past conflicts have illuminated the need for the Army to possess an infantry force that is transported by vehicles and fights dismounted in complex terrain to be successful against a hybrid threat in cities. Replacing ICVs with IFVs may change the way the SBCT fights on the ground.

The Army should consider moving a minimum of one ABCT to be permanently stationed in Europe as a better option to deter Russian aggression rather than upgrading the ICV with 30mm. The Army should not add the 30mm option to the entire SBCT force because it defeats the unique functionality of the SBCT ICV where it then becomes more akin to an IFV suited to fighting vehicles in combat. The SBCT's role in decisive action is to remain the medium force that can move quickly by means of a light armored vehicle and fight dismounted in complex terrain.

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Acronyms

ABCT	Armor Brigade Combat Team
ADP	Army Doctrine Publication
ADRP	Army Doctrine Reference Publication
ATGM	Anti-Tank Guided Missile
BCT	Brigade Combat Team
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CTC	Combat Training Center
CVMS	Combat Vehicle Modernization Strategy
DATE	Decisive Action Training Environment
DOTMLPF-P	Doctrine, Organization, Training, Material, Leadership, Personnel, Facilities- Policy
FCS	Future Combat System
FM	Field Manual
FMTV	Family of Medium Tactical Vehicles
GCV	Ground Combat Vehicle
GWOT	Global War on Terrorism
IBCT	Infantry Brigade Combat Team
ICV	Infantry Carrying Vehicle
IDF	Israeli Defense Forces
IFV	Infantry Fighting Vehicle
MGS	Mobile Gun System
MPF	Mobile Protected Firepower
NATO	North Atlantic Treaty Organization
ONS	Operational Needs Statement
RPG	Rocket Propelled Grenade
SBCT	Stryker Brigade Combat Team
TRADOC	Training and Doctrine Command

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Introduction

Our legacy Army's warfighting prowess today is assembled around two force characteristics - heavy and light: magnificent heavy forces that are well equipped for war but difficult to deploy strategically, and magnificent light forces that can respond rapidly and are well suited for stability and support operations but lack staying power against heavy mechanized forces... With each passing year, our condition as a force becomes a greater liability.

— General Eric Shinseki, Chief of Staff of the Army, 2000

The Stryker Brigade Combat Team's (SBCT) role in decisive action is to remain the medium force that can move quickly by using a light armored vehicle and fight dismounted in complex terrain. Currently, a third of the conventional Army Brigade Combat Teams (BCTs) consist of Stryker vehicles. The Army is in the process of fielding a new vehicle called the Dragoon, armed with a 30mm turret on top of the Stryker to provide additional lethality to the Stryker formations. The initial fielding of the vehicle is in response to an Operational Needs Statement (ONS) submitted by the 2d Cavalry Regiment, stationed in Germany and tasked with deterring Russian aggression and reassuring our European allies.¹ The ONS is a temporary and expensive solution when an Armor Brigade Combat Team (ABCT) is more appropriate for the task. The new upgrades to the Stryker change the capability and tactics of what it was designed to do: a means to carry infantrymen to the battlefield quickly and fight dismounted. If the Dragoon becomes the new variant to replace the Infantry Carrier Vehicle (ICV) with an Infantry Fighting Vehicle (IFV), it compromises the unique functionality of the SBCT. This conclusion is evident upon analyzing the original intent for the Stryker vehicle and the future threats in decisive action.

Army Doctrine Reference Publication (ADRP) 3-0 defines decisive action as “the continuous, simultaneous combinations of offensive, defensive, and stability” tasks. These

¹ Sydney Freedberg, “The 30 Millimeter Solution: Army Upgunning Strykers vs. Russia,” *Breaking Defense*, last modified 2015, accessed March 14, 2017, <http://breakingdefense.com/2015/04/the-30-millimeter-solution-army-upgunning-strykers-vs-russia/>.

tasks provide direction for an entire operation and are how the Army conducts Unified Land Operations.² The Army's operating concept has changed since introducing these tasks in 2001. However, the idea of balancing the three tasks during operations remains consistent.³ Understanding what decisive action is will highlight the SBCT's relevance as its capabilities will be needed to fight dismounted in cities against future threats.

The first consideration for the Army in determining the SBCT's future role is to evaluate the reasons the SBCT was originally created and what operational gap the formation filled. The end of the Cold War, for a time, ended perceptions that the United States would need to fight a near-peer threat in the future. Military performance in the Gulf War validated American technological superiority, however, there was a capability gap between the expeditionary deployment of light forces with limited firepower and the slower deployment of heavy forces with their greater firepower. The answer was the SBCT, originally called the Interim Brigade Combat Team as it was the beginning of the Army's transition to the Objective Force. The Objective Force was later canceled following lessons learned in Iraq and Afghanistan.⁴ The SBCT remains relevant today to fill the gap and contribute to achieving decisive action as originally intended against future threats.

The second consideration for the Army in determining the SBCT's role is to anticipate and understand future threats and future combat scenarios. Future threats are not primarily conventional threats but threats from irregular and hybrid forces operating in an urban

² Army Doctrine Reference Publication (ADRP) 3-0, *Operations* (Washington, DC: Government Printing Office, 2016), 3-1.

³ Bill Benson, "Unified Land Operations: The Evolution of Army Doctrine for Success in the 21st Century," *Military Review*, XCII, no. 2 (2012), 57.

⁴ Reed Burggrave, "Is the Stryker Brigade Combat Team Still Relevant" (Monograph, US Army Command and General Staff College, 2016), 24.

environment and in complex terrain. These factors require a medium force, like the SBCT with capabilities to move quickly by means of a light armored vehicle and fight dismounted.

The Army is concerned that its current fleet of vehicles are quickly becoming obsolete and need immediate upgrades to retain overmatch against its future enemies. The Army has begun the Combat Vehicle Modernization Strategy (CVMS) to address these concerns and plans to integrate the Mobile Protected Firepower (MPF) concept into all three types of BCT formations.⁵ Senior leaders suggest that our future formations be mobile and all three must maneuver dispersed.⁶ The future also calls for combat vehicles that have high mobility, low maintenance, are light weight, and cost efficient. Yet, the Army's solution is more lethality and protection, which will eventually replace the Stryker and other vehicles with tank like systems.⁷

The Stryker's dispersed maneuver capabilities are degraded if the Army attempts to invest in new vehicles which are heavier, and less focused on transporting dismounts. The current role of the Stryker fills the gap of mobility and speed to fight dispersed and put infantrymen into restrictive and complex terrain in order to fight dismounted. Defining the best role of the Stryker in decisive action requires considering what each of the different BCT's capabilities is and which capabilities can the SBCT provide better than ABCT and Infantry Brigade Combat Team (IBCT).

The ABCT possesses the most firepower, however, is slower to deploy, and its operational reach is limited by a constant requirement for sustainment and maintenance. The ABCT lacks the number of dismounted infantry necessary to be effective in the light role. The

⁵ Maneuver, Aviation, and Soldier Division Army Capabilities Integration Center, *The US Army Combat Vehicle Modernization Strategy* (Fort Eustis, VA: US Army Training and Doctrine Command, 2015), 1-2.

⁶ Department of the Army, *TRADOC Pamphlet 525-3-6: The US Army Functional Concept for Movement and Maneuver 2020-2040* (Fort Eustis, VA: Training and Doctrine Command, 2017), 12.

⁷ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 20.

difference between the ICV and the IFV is the IFV has dismounts to support the firepower of the vehicle's weapon system, whereas the ICV uses the platform to support the infantryman. The Stryker Brigade, like all formations, has its weaknesses; however, it has in recent wars proven to be the formation best able to quickly employ infantry on the battlefield. Recent operations in have demonstrated that both firepower and dismounted infantry are needed to achieve overmatch against a hybrid threat.⁸ The Army recognizes the capabilities of all three BCTs but needs to develop the right tool for the problems it faces.

The SBCT lacks the lethality and protection of the ABCT; however, the SBCT provides mobility to the dismounted infantry Soldier through the means of an ICV. The SBCT is unique in its ability to transition to dismounted infantry. Recent analyses of campaigns in the Vietnam, Lebanon, and Afghanistan conflicts help highlight the need for a dismounted capability to fight a hybrid threat. These conflicts demonstrate that tanks primarily achieve overmatch against an adversary and destroy inferior tanks and vehicles, but heavily armored forces can be defeated by inexpensive tactics employed by dismounted infantry forces. This section emphasizes the importance of light infantry fighting dismounted against the future hybrid threat.

An examination of the Army's combat vehicle modernization strategy along with the anticipated future of warfare is necessary to prioritize funding due to budget constraints, and to be able to defeat the most likely threat. If the Army is going to invest in vehicle transformation, then it needs to make sure it can win future wars at a price that Congress will approve. The Army's vehicle modernization strategy is comparable to the Future Combat System (FCS) in that it is looking for a one size fits all solution. If the Army invests in larger weapon systems, more armor for protection, and more mobility with tracks, then the new formation is neither lighter, nor more

⁸ Matt Matthews, *We Were Caught Unprepared* (Fort Leavenworth, KS: Combat Studies Institute, 2008), 61-64.

deployable, and it is less able to fight dispersed as the future operating environment requires. Senior leaders must accept that there is no universal tool or investment that will be able to defeat every threat. Future warfare is anticipated to be amongst populations in complex terrain; most likely it will be in large cities with narrow streets and large multi-story buildings. The Stryker remains relevant because it is the only existing combat system that currently can solve the problems of mobility and protection for the dismounted infantryman and performs well in the urban environment. All three BCT formations require improvement based on the strengths of their current capabilities, yet trying to add mobile protected firepower to every formation comes at the expense of the capabilities necessary for the Army to win future wars.

The differences between the three BCT formations are lethality, mobility, protection, costs, gross tonnage, and cubed packaging of the units. Several of these issues are better solved by investing wisely among the three formations without degrading the capabilities each BCT brings to the fight. The antidote of adding more firepower and protection is counter to the Army trying to achieve more mobile and lighter forces to face the most likely threats in the future operating environment. The role of the SBCT is a mobile force that carries Infantrymen to the battlefield who then maneuver as a dismounted fighting force as originally intended, thus reinforcing its relevance in the decisive action environment.

US Army Doctrine and Decisive Action

It is important to understand the connection between doctrine and concepts when analyzing decisive action, Unified Land Operations, and threats in relation to SBCT relevance in future warfare. Doctrine provides a common vision for the Army on how it fights its wars. It shapes how Soldiers train and incites thoughts for what kinds of weapons the Army should invest in and how they should be employed.⁹ The purpose of this section is to define decisive action, explain how the Army came to decisive action as a doctrine, and to define the threats the Army faces. It is to provide a base of understanding of terms for the follow-on sections to highlight why the SBCT is relevant as a dismounted force. Investing in new technologies and weapon systems can shape doctrine and it is important to get it right.¹⁰

ADRP 3-0, *Operations*, states “Decisive action is the continuous, simultaneous combinations of offensive, defensive, and stability or defense support of civil authorities tasks.”¹¹ It is essentially everything the Army does. However, the Army has not always had decisive action in its lexicon. Doctrine changed from the 1990s to 2016 in response to the environment, threats, and resources available. The changes in doctrinal terms and concepts often led to confusion and misuse of language when discussed about what kinds of warfare units needed to prepare for: counterinsurgency and limited conflict or conventional war and major combat operations. Full-Spectrum Operations and decisive action emphasize that units must be prepared to do both simultaneously.¹²

⁹ P.W. Singer, *Wired For War* (New York: Penguin Books, 2009), 208.

¹⁰ Ibid.

¹¹ ADRP 3-0, *Operations* (Washington, DC: Government Printing Office, 2016), 3-1.

¹² Field Manual (FM) 3-0, *Operations Change 1* (Washington, DC: Government Printing Office, 2011), Forward.

In the late 1990s the Army recognized that stability operations were often just as important as offensive and defensive operations.¹³ Army doctrine in 2001 included Field Manual (FM) 3-0, *Operations* which discussed the Army's need to be able to conduct Decisive Full Spectrum Operations which included four types of operations: offense, defense, stability and support.¹⁴ Support operations are conducted within the United States; conversely, offense, defense and stability operations are conflicts which occur outside the United States. Counterinsurgency operations fell under the scope of Full Spectrum Operations, requiring Army units to execute a combination of all three types of expeditionary operations listed in FM 3-0. The amount of effort toward offensive, defensive, or stability tasks depended largely on the environment and the threat, and could change over time.¹⁵

The Global War on Terror (GWOT) and the end of major combat operations in Iraq created an environment where counterinsurgency operations became a greater focus over major combat operations. The 2005 Training and Doctrine Command (TRADOC) Pamphlet 525-3-0, *The Army in Joint Operations* discussed the risks of ignoring the threats of traditional adversaries to focus on irregular warfare.¹⁶ The 2008 FM 7-0, *Training for Full Spectrum Operations*, nullified the idea that stability operations were a product of successful major combat operations. FM 7-0 stated,

During the Cold War, Army forces prepared to fight and win against a near-peer competitor. The Army's training focus was on offensive and defensive operations in major combat operations. As recently as 2001, the Army believed that forces trained to conduct the offense and defense in major combat operations could conduct stability and civil support operations effectively... However, the complexity of today's operational

¹³ FM 3-0, *Operations Change 1*, 1-1.

¹⁴ Ibid, 7-1.

¹⁵ FM 3-24, *Counterinsurgency* (Washington, DC: Government Printing Office, 2006), 1-19.

¹⁶ TRADOC Pamphlet 525-3-0, *The Army in Joint Operations: The Army's Future Force Capstone Concept 2015-2024, Version 2.0* (Fort Monroe, VA: Training and Doctrine Command, 2005), 3.

environments and commander's legal and moral obligations to the population of an area of operations has shown that approach to be incorrect.¹⁷

These definitions inadvertently created confusion where units were unsure if they were to focus on one kind of threat over the other.¹⁸

In 2011, the Army again revised its doctrine and replaced the term Full Spectrum Operations with decisive action. The Army created one of two capstone doctrine publications, Army Doctrine Publication 3-0, *Unified Land Operations*, which built upon the concepts of the old doctrine and the four types of operations.¹⁹ Doctrine defined decisive action as the simultaneous combination of offensive, defensive, and stability operations tailored to the appropriate mission and environment. This doctrinal manual described two kinds of warfare, regular and irregular and described threats as being both conventional and hybrid.²⁰

The Army identified the risk of focusing on counterinsurgency operations for over a decade. Leaders became concerned that specific skills and tasks necessary for BCTs to effectively execute military operations against conventional threats had begun to atrophy. The Combat Training Centers (CTCs) and TRADOC took the opportunity to transition to training scenarios away from counterinsurgency to ones that BCTs were more likely to face in future conflict.²¹ In 2012, the CTCs and TRADOC implemented the Decisive Action Training Environment (DATE), which is a scenario consisting of five fictional countries that provided a framework and

¹⁷ Benson, "Unified Land Operations," 53.

¹⁸ FM 3-0, *Operations*, Forward.

¹⁹ Army Doctrine Publication (ADP) 3-0, *Unified Land Operations* (Washington, DC: Government Printing Office, 2011), 1.

²⁰ ADP 3-0, *Unified Land Operations*, 5.

²¹ US Army National Training Center Operations Group, *Training for Decisive Action: Stories of Mission Command* (Fort Leavenworth, KS: Combat Studies Institute Press, 2014), v.

operational environment for BCTs to conduct realistic training combining all the tasks of decisive action. The new scenario is not intended to refocus efforts on conventional operations at the expense of counterinsurgency or stability operations.²²

Army Doctrine Publication 3-0, *Operations*, published in 2016 defines a threat “as any combination of actors, entities, or forces that have the capability and intent to harm US forces, US national interests, or the US homeland. Threats consist of enemies, adversaries, neutrals, and hybrid threats. Threats may include individuals, groups of individuals, paramilitary or military forces, nation-states, or national alliances.”²³ FM 3-96, *Brigade Combat Team* simplifies the kinds of threats Brigade Combat Teams (BCTs) may have to face when executing decisive action. Decisive action doctrine will require SBCTs to operate as a dismounted force for two reasons: First, it is how the SBCT was originally designed. Second, future conflict requires the dismounted capability the SBCT provides to win against most likely anticipated threats.

Original Intent: Why Did the Army Design and Field the SBCT?

The original intent for the SBCT was to fill the gap between the time required to deploy light forces and heavy forces. The SBCT was configured to fight as dismounted infantry in combat.²⁴ Operation Desert Storm revealed the need for the Stryker’s design for lightweight, quick response mobility of dismounted forces. During Operation Desert Shield, Iraqi forces invaded Kuwait and the 82nd Airborne Division was the only US Army force able to deploy with

²² US Army National Training Center Operations Group, *Training for Decisive Action: Stories of Mission Command*, v.

²³ ADP 3-0, *Operations*, 2.

²⁴ Alan Vick, David T. Orletsky, and Bruce R. Pirnie, *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options* (Santa Monica, CA: RAND, 2002), 7-8.

enough speed to respond to a possible invasion of Saudi Arabia by Iraqi forces. However, these airborne formations had no means of transportation with sufficient protection to move the paratroopers around the battlefield. The post-war analysis concluded that a larger, more mobile force was needed for quicker response.

In the 1990s, Chief of Staff of the Army, General Eric Shinseki, recognized an operational shortfall between the initial deployment of light forces and heavy divisions being able to strategically deploy against potential threats across the globe. The Army intended to transform itself into a medium force that extended its strategic reach to counter potential threats in the 21st Century.²⁵

The emerging doctrine at the end of the 20th Century, known as Joint Vision 2020, established dominant maneuver and precision engagement as key to battlefield dominance. Dominant maneuver allows units to deploy anywhere in the world faster than ever before. Precision engagement ensures the use of systems technology between similar platforms to deliver combined arms and synchronize fires effects as a single unit.²⁶ In 1999, General Shinseki announced the creation of the Interim Brigade Combat Team concept to create a lethal, mobile, and survivable fighting force that could deploy anywhere in the world within 96 hours.²⁷

This new program would include light motorized wheeled vehicles with different capabilities that could quickly carry troops and support dismounts with assault guns.²⁸ The transformation of the force would include new information technology for better command and

²⁵ Vick et al., *The Stryker Brigade Combat Team*, 4-6.

²⁶ Vick et al., *The Stryker Brigade Combat Team*, 4-6.

²⁷ Vick et al., *The Stryker Brigade Combat Team*, 4.

²⁸ John J. McGrath, *An Army at War: Change in the Midst of Conflict* (Fort Leavenworth, KS: Combat Studies Institute Press, 2005), 107.

control, employment of fires, and mobility. This transformation integrated information technology upgrades to existing platforms and hardware updates for legacy formations. The Stryker Brigade Combat Team was designated as the first formation of the new interim force.²⁹

In under two years, the concept of the new brigade became a reality, and the first Stryker Brigade began training at Fort Lewis, Washington where it would test its exclusive features before being deployed to Iraq. The Stryker platform was unique when compared with the Bradley because it could deliver infantry into combat faster and in greater numbers than the Bradley Fighting Vehicle. Additionally, the new wheeled vehicle would provide greater mobility and would require less maintenance than tracked vehicles. Also, the aspect of enhanced networked technology made the SBCT an attractive new development to the transformation force. The core characteristics to the Stryker Brigade were its ability to deploy quickly, its mobility, and the enhanced Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) design.³⁰

The SBCT's rapid deployment capability was a crucial part of the Army's Objective Force. The Army's Objective Force concept set the goals of deploying a brigade anywhere in the world in ninety-six hours, a division in 120 hours, and five divisions to any potential threat area with a thirty-day response time. Strykers could be rapidly deployed because the vehicle fit inside existing US Air Force aircraft. The Army planned to deploy SBCTs using C-5 and C-17s. The SBCT was not intended as an assault force but would arrive soon after friendly forces seized airfields or ports in the area of operation. The SBCT's basic load contained enough sustainment for a few days, and it fought primarily with dismounted infantryman.³¹ However, the Stryker was

²⁹ Vick et al., *The Stryker Brigade Combat Team*, 4-6.

³⁰ McGrath, *An Army at War*, 46.

³¹ Vick et al., *The Stryker Brigade Combat Team*, 8.

not designed to be an IFV like the Bradley, but rather an ICV to deliver the infantrymen to the fight. The Stryker provided infantry with enhanced mobility because it could carry more dismounts who could operate in complex terrain and the vehicle was much quieter than the Bradley. The Stryker had networked technology for better command and control, and was intended to be the interim brigade as the Army would try to create the FCS.³²

At the center of the Objective Force Concept was the idea of the FCS. This system focused on improved networking at the company and battalion levels to enable combined arms operations. The force would be equipped with a robotic capability and several versions of unmanned aerial vehicles facilitating a reconnaissance capability. The intent was to create a force that could identify the full picture of enemy formations before coming into contact, thereby allowing units to destroy them with standoff via indirect fire weapon systems. The Army anticipated attaining this full capability by 2010 following a period of 8-10 years of intensive research and development.³³ However, the attacks on September 11, 2001, forced the military into a long, expensive counterinsurgency campaign that would re-shape how the Army prioritized its vehicle capability for the conflicts in Afghanistan and Iraq. The Stryker's core characteristics of enhanced C4ISR, and mobility, gave SBCTs a marked advantage over mechanized forces during counterinsurgency operations.

Despite the fact that the Army never fully realized the Objective Force, SBCTs served primarily as a constabulary force in counterinsurgency operations in both Iraq and Afghanistan. The Stryker ICV proved to be extremely effective for Infantry transportation in the urban environment. It could go where tanks could not and it facilitated a command and control picture

³² McGrath, *An Army at War*, 47.

³³ Vick et al., *The Stryker Brigade Combat Team*, 8-10.

that was unparalleled at the time.³⁴ The first SBCTs deployed to Iraq proved very successful in counterinsurgency operations. They were fast, agile, lethal, and survivable. Above all, its sustainment needs proved to be more efficient than other formations as the Stryker used the same engine as the Family of Medium Tactical Vehicles (FMTV).³⁵ The Army now faces a time of uncertainty where all BCTs must execute decisive action against a wide variety of threats. The original intent in creating the SBCT and its use in current operational theaters demonstrate its relevance as a reliable and high performing transport that quickly moves infantry into the complex terrain and fights dismounted. Its unique function and capabilities are even more relevant for challenges faced in future war.

The Future of War: Is the SBCT's Original Design Still Relevant

The enemy's ability to adapt against the superior firepower of the armored force and the future of war further justify the need for the Stryker's dismounted capability in decisive action. The US Army today is involved in a strategic balancing act. After sixteen years of conflict in Iraq and Afghanistan, the Army must prioritize its spending on research and development to face future threats while at the same time being constrained by significant reductions in the defense budget. The US Army continues to have troops deployed in current conflicts while it is attempting to prepare for future wars.³⁶ The Army must embrace technology advances and experiment with new capabilities. It must prioritize its financial efforts into innovation which can

³⁴ McGrath, *An Army at War*, 46-47. The FBCB2 (Force XXI Battle Command, Brigade and Below) was in every vehicle and the additional organic enablers added to the Brigade allowed for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance; a new system that other BCTs did not have at the time.

³⁵ McGrath, *An Army at War*, 51.

³⁶ David W. Barno and Nora Bensahel, *The Future Of The Army* (Washington, DC: Atlantic Council, 2016), 10.

achieve realistic overmatch for the most likely and dangerous future threats. The challenge of investing in new vehicles and preparing for the next conflict is anticipating what future war looks like. The National Military Strategy of 2015 discusses three kinds of conflict. The military must prepare itself to address state conflict, non-state conflict, and the hybrid threat.³⁷ Retired Maj General Robert Scales uses the historical behavior approach to determine what the most likely conflict and threats will be in the future. Scales concludes that future conflicts will be waged against a hybrid threat in cities. Historical examples in the Vietnam conflict, Soviet-Afghanistan conflict, and Israeli-Hezbollah conflict highlight the need for dismounted infantry against hybrid threats.

State conflict is more conventional and is predicted to be the lowest probability of the three kinds of conflicts. However, it has the greatest cost in lives, money, and resources. This kind of conflict requires the large deployment of a joint force across multiple domains. Current state threats include Russia, North Korea, Iran, and China.³⁸

The next type of threat the US must prepare to fight are irregular forces or non-state actors. Irregular forces use asymmetric and unconventional methods such as terrorism, guerrilla tactics, and insurgency to draw the United States into a protracted war. Their threat capabilities typically include small-arms, short-range rockets, mortars, and improvised explosive devices. Irregular forces use local and regional support networks to aid their efforts and attacks. They often conduct attacks among the population and in urban areas and can operate under a

³⁷ Joint Chiefs of Staff, "The National Military Strategy of The United States of America 2015," accessed March 16, 2017, http://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf. 4.

³⁸ Joint Chiefs of Staff, "The National Military Strategy of The United States of America 2015."

decentralized command structure. Examples of irregular threats include the Taliban in Afghanistan and Al Qaeda in Iraq.³⁹

The third probable threat is a hybrid threat. This scenario blends conventional and irregular forces working to defeat US forces asymmetrically.⁴⁰ Hybrid threats are the newest characterization of threats to the United States. These threats are a combination of regular and irregular forces working together to achieve the same effects. The hybrid threat is becoming increasingly more probable as nation states must employ a mixture of conventional and irregular forces to gain advantage against US forces. Enemy forces will attempt to adapt tactics and technology to try and outmatch US forces by using less expensive means.⁴¹ The enemy employs measures to limit decisive engagements and uses irregular forces that blend into a local population. A recent example of a hybrid threat is when the Israeli Defense Forces (IDF) had to fight the hybrid forces of Hezbollah in Lebanon in 2006.⁴² BCT commanders must understand these threats in the context of the operational environment to be successful in decisive action. Forecasting where and when the next conflict will occur is difficult but necessary for US leaders to focus training, funding, and resources to win against the most likely adversaries of the future.

Retired Major General Robert Scales observes that individuals attempting to forecast the future often are inaccurate. Major General Scales discusses predicting the next conflict in his book, *Scales on War*. Scales identifies the major methodologies that strategists use when attempting to anticipate the future. He believes threat predictions often fail because they are a bureaucratic process inherited from the Cold War. The methodologies or concepts often result in

³⁹ FM 3-96, *Brigade Combat Team* (Washington, DC: Government Printing Office, 2015), 2-5.

⁴⁰ Joint Chiefs of Staff, "The National Military Strategy of The United States of America 2015."

⁴¹ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 8.

⁴² FM 3-96, *Brigade Combat Team*, 2-6.

strategists trying to fight the enemies we wish to fight rather than the threats which have been consistent since the end of the Second World War. Scales identifies the same likely state actors as listed in the National Military Strategy: Russia, China, and North Korea. He offers a new approach to anticipating future conflict by combining contemporary history and human behavior.⁴³

The strength of the historical-behavioral approach comes from the idea that no matter the region, actor, motive, or circumstance of conflict, our adversaries demonstrate a repeated behavior that gives them the greatest chance of success against the United States. Scales applies this approach to determine the likelihood of conflict between the United States and state actor adversaries. Scales claims that China possesses one of the best militaries in the world and its capabilities are growing. However, he concludes that China's behavior does not match the profile of a nation wishing to go to war due to geostrategic and nuclear reasons. Its growing military capability is used as justification for a larger US defense budget by the US Navy and US Air Force in expensive weapons procurement programs. Nuclear powers have little chance to face one another in major combat operations nor will they likely demand a major mobilization of massed forces.⁴⁴

Similarly, Scales concludes that North Korea and Russia are unlikely opponents in a major conflict. Both countries possess a nuclear capability. Although they are both investing in new military capabilities, the outcome of a major conflict would be disastrous for all nations involved. The United States must prepare for the most likely enemy in the near term which will

⁴³ Robert H. Scales, *Scales on War: The Future of America's Military at Risk* (Annapolis, MD: Naval Institute Press, 2016), 84-85.

⁴⁴ Scales, *Scales on War*, 93-95.

most likely be in the chaotic Middle East.⁴⁵ The US military must achieve overmatch against state actors but should prioritize its focus, spending, and posture on the most likely threat and the future operating environment. These likely wars are unpopular and often protracted and are to be won by infantry fighting in close combat, most likely in populated cities.

Populations living in cities have grown exponentially over the last several years. Throughout history, military leaders have tried to avoid conflict in urban centers as it presents complex terrain and a large potential for military and civilian casualties. In 2016, a United Nations report estimated 54.5 percent of the world's population lived in cities and projected that this percentage would rise to 60 percent by 2030. The North Atlantic Treaty Organization (NATO) Urbanization Project, initiated in 2014, involves several countries who study the impacts of urbanization on military operations. The NATO project determined that BCTs will need to be prepared to conduct three kinds of operations in megacities: joint forcible entry, major combat, and stability operations, while limiting the number of military and civilian deaths.⁴⁶

The three kinds of operations in megacities are all types of missions where the capabilities of the SBCT can be used while executing decisive action. 7th ID incorporates the rapid deployment of a SBCT in its operation's plan called Distant Archer. Distant Archer is designed for the early arrival of the SBCT at an airport or seaport of debarkation following joint forcible entry operations. The SBCT then sets the conditions for the expansion of the lodgment area and allows for follow on forces to conduct combat operations.⁴⁷ The anticipated future of

⁴⁵ Scales, *Scales on War*, 95-104.

⁴⁶ John Spencer, "It's Time to Create a Megacities Combat Unit," *RealClear Defense*, January 31, 2017, accessed March 23, 2017, http://www.realcleardefense.com/articles/2017/01/31/its_time_to_create_a_megacities_combat_unit_110717.html.

⁴⁷ Steve Krippel and Chris Ricci, "The Stryker Brigade Combat Team: America's Early Entry Force," *Infantry*, July-September 2014, 28, accessed April 28, 2017. <http://www.benning.army.mil/infantry/magazine/issues/2014/Jul-Sep/pdfs/Krippel.pdf>.

major combat in cities demonstrates the need for the military to find the right balance between manpower and firepower and the ability to fight dismounted.

Agility in major combat is necessary in both open terrain and complex terrain such as cities. In open terrain, the vehicles can remain out of range of the enemy's weapon systems, but in cities they are constrained to streets and roads where dismounted movement will be required.⁴⁸ Urban combat is inevitable, and restrictive terrain has challenged the relevancy of the tank. Yet, recent operations have proven that a balance between lethality, mobility, and protection can be applied with the right integration of the force. The Stryker is more mobile in the cities, but tanks have proven vital when combat forces had to quickly transition from stability to offensive operations against a hybrid threat.⁴⁹ Future warfare is likely to be against an adaptive hybrid threat in megacities. Lessons learned from recent conflicts have illustrated the need for both the firepower of the tank, and the dismounted capability of the infantry.

Past conflicts have shown how the enemy will adapt in future warfare against a force with superior technological advantage. The US conflict in Vietnam, the Soviets in Afghanistan, and the IDF in Lebanon are all instances where a modern Army was unprepared to fight an asymmetric adversary. The modern armies relied on technology and lethality of armored forces at the expense of dismounted capability which ultimately required either a change in tactics of the modern army or highlighted their mistakes in the aftermath of the conflicts.

US forces went to war in Vietnam burdened with the idea that superior firepower would dominate the battlefield and limit the exposure of troops in the close fight. The commander of 1st Infantry Division, Major General William DePuy, quickly realized that although his firepower

⁴⁸ Kendall D. Gott, *Breaking The Mold: Tanks in the Cities* (Fort Leavenworth, KS: Combat Studies Institute Press, 2006), ix.

⁴⁹ Gott, *Breaking The Mold*, 111-115.

killed a large number of enemy combatants, most of his friendly casualties were coming from mortar fire, ambushes, and mines. He adapted his tactics to focus on smaller infantry units able to locate and fix the enemy using the firepower from a variety of supporting platforms to do the killing.⁵⁰ The United States is not the only power with superior technology that fought against an adaptive enemy force.

In the late 1970s the Soviets learned some of the same hard lessons in Afghanistan that the United States had in Vietnam by relying on superior firepower and technology for combat success. The Soviets attempted to use conventional tactics in complex terrain in order to defeat the Mujahidin. Soviet tactics were hindered by their over-reliance on tanks and infantry carrying vehicles that remained buttoned-up and anchored to the roads. The Mujahidin adapted by dispersing in small elements, using the mountainous terrain to its advantage, and conducting ambushes as well as shoulder-fired missiles to defeat the Soviet's helicopters. The defeat in Afghanistan was the beginning of the end of the Soviet Union.⁵¹ Similarly the IDF experience in 2006 illustrated a superior force's inability to fight dismounted against an enemy using primitive means to destroy armored vehicles.

In 2006, the IDF underestimated the technologically inferior Hezbollah forces in Lebanon and neglected to emphasize the importance of its own maneuver ground forces. Hezbollah developed a new doctrine to counter the strengths of the IDF that included transforming its guerrilla force into a formidable hybrid threat. The use of dismounted forces armed with advanced Anti-Tank Guided Missiles (ATGMs) and Rocket Propelled Grenades (RPGs) were

⁵⁰ Robert H. Scales, *Yellow Smoke: The Future of Land Warfare for America's Military* (Lanham, MD: Rowman & Littlefield Publishers, 2003), 51; US Army Center of Military History, *Changing An Army: An Oral History Of General William E. Depuy* (Washington DC: Government Printing Office, 2017), 144, 148-149.

⁵¹ Scales, *Yellow Smoke*, 54-55.

able to defeat the heavily armored and mechanized forces of the IDF. The Hezbollah-Israeli War of 2006 is an example of poor combined arms-maneuver and an over-reliance on technology to fight a hybrid, dismounted force.⁵² These historical examples highlight the need for forces to balance firepower with a dismounted capability, especially in complex terrain where future wars will most likely take place.

The Army's Functional Concept for Movement and Maneuver assumes that US forces will most likely fight hybrid threats in future wars.⁵³ Dismounted infantry capability is necessary to fight dispersed in restrictive terrain. It is the ability to maneuver dispersed with dismounted infantry that makes the Stryker relevant whereas the ability to destroy armored vehicles while mounted should remain with the ABCT. The SBCT's primary weapon system against tanks is the dismounted infantryman, because they can hold restrictive terrain and establish anti-armored ambushes against tanks in engagement areas. Complex terrain, especially in the urban environment, requires the SBCT to dismount so it can maximize its mobility in cities. The nature of future war is evidence for the continued relevance of the SBCT as a dismounted capability in decisive action when compared with other BCT capabilities.

BCT Capabilities to Meet Enemy Adaptability and Future Threats

Each of the BCTs contain specific capabilities which make them unique in how they employ force, dependent upon the mission variables of the environment. BCTs can accomplish a wide range of missions in the decisive action environment. When comparing the SBCT and the ABCT, the SBCT, without additional cost investment of adding the 30mm topside turret, is more effective to meet current and future hybrid threats in complex terrain. Armored infantry is

⁵² Matthews, *We Were Caught Unprepared*, 61-64.

⁵³ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 8.

necessary to protect the lethality of tank formations during major combat operations. Stryker infantry is needed to hold ground and requires vehicles to transport the large amounts of equipment to do their job, which is to fight dismounted in complex terrain. Light infantry is necessary for rapid air transportability and is necessary to seize a lodgment for the follow-on deployment of heavier forces.⁵⁴ These formations are currently arrayed in BCTs to conduct the fundamentals of decisive action: light infantry (IBCT); Stryker infantry (SBCTs); and armored infantry (ABCTs). Commanders must understand the strengths, and weaknesses of each BCT in order to employ the right force in the operating environment.

FM 3-96, *Brigade Combat Team*, describes the IBCT as “an expeditionary, combined arms formation optimized for dismounted operations in complex terrain. The IBCT can conduct entry operations by ground, air land, air assault, or amphibious assault into austere areas of operations with little or no advance notice. Airborne IBCTs can conduct vertical envelopment by parachute assault. The IBCT’s dismounted capability in complex terrain separates it from other functional brigades and BCTs.”⁵⁵ The IBCT provides commanders with the ability to fight in restrictive terrain where the ABCT and SBCT cannot maneuver due to their vehicular limitations. By 2020, the IBCT is planned to contain over 100 Javelin missiles; twelve M119 105mm Howitzers and six M777 155mm towed Howitzers. Five of these brigades will have an airborne capability.⁵⁶

The SBCT initially was developed around a team designed to integrate combined arms capabilities focused on dismounted and mobile operations. The Stryker BCT’s ability to destroy

⁵⁴ Huba Wass de Czege, “Three Kinds of Infantry,” *Infantry* 75, no. 4 (July-August 1985), 11-12.

⁵⁵ FM 3-96, *Brigade Combat Team*, 1-1 – 1-2.

⁵⁶ Department of Strategic Leader Development, *Army Organization and Employment Data* (Carlisle Barracks, PA: US Army War College, 2017), 12.

enemy vehicles is primarily due to its number of anti-tank weapon systems throughout the formation.⁵⁷ FM 3-96, *Brigade Combat Team*, states, “The SBCT primarily fights as a dismounted infantry formation.”

The SBCT includes three motorized infantry battalions which are composed of three rifle companies modeled after the light infantry company of the IBCT. Additional organic assets in the rifle companies originally included a sniper team, 120mm mortar section, a Mobile Gun System (MGS) platoon, and more Soldiers and vehicles able to move the entire company at one time. These additional assets made the Stryker rifle company the largest company organization in the US Army allowing the formation to deliver more dismounts to the battlefield by means of vehicular transport. Other organic assets in the Brigade included: a reconnaissance squadron; an artillery battalion, a brigade support battalion, an anti-tank company, an engineer company, a signal company, and a military intelligence company.⁵⁸

The Army currently fields nine SBCTs; seven are Regular Army and two are in the Army National Guard. Each of the SBCTs are currently equipped with eighteen M777 155mm towed howitzers and contain approximately 300 Stryker vehicles in ten different variants. They also have twelve MGS with 105mm guns which are currently in the Reconnaissance Squadron.⁵⁹ The SBCT can cause multiple dilemmas in an urban environment while the ABCT is restricted to the major road networks. The SBCT’s performance in Iraq has demonstrated the effectiveness and relevance of the Stryker’s ability to operate in cities as a highly mobile and dismounted force.

The first SBCT in combat was 3d Brigade, 2d Infantry Division during Operation Iraqi Freedom in October 2003. The unit served in several roles which quickly gave the vehicles a

⁵⁷ FM 3-96, *Brigade Combat Team*, 1-6.

⁵⁸ Burggrabe, “Is the Stryker Brigade Combat Team Still Relevant,” 24.

⁵⁹ Department of Strategic Leader Development, *Army Organization and Employment Data*, 14.

positive reputation from the Soldiers for its maneuverability, speed, and quiet operation making it favorable for raids, patrolling, and cordon-and-search operations in the urban streets of Mosul. In fact, the Iraqis began calling the Strykers “Ghost Riders” because they were so quiet. The Force XXI Battle Command Brigade and Below (FBCB2) digital network linked all the Stryker vehicles together for better command and control. Leaders could communicate with subordinate units better by disseminating graphic overlays, maps, photos and text over the networked system. This greatly reduced the reaction time for units to act on intelligence and information that led to the capture of several enemy high valued targets.⁶⁰

On one occasion in 2004, 1st Squadron, 14th Cavalry, a Stryker unit, received intelligence about a high valued target operating in their area of operation. In ten minutes the unit distributed the information from the staff to a tactical unit on the ground by using the FBCB2. Thirty minutes later, a Stryker Company conducted a cordon and search mission and acted on the intelligence.⁶¹ Despite early critics of the vehicle, the SBCT’s performance in Iraq demonstrated that the Stryker was an effective combat vehicle when used properly as intended by doctrine, and not as a substitute for the Bradley fighting vehicle.⁶²

The ABCT is the heaviest BCT and has the most combined arms capability that achieves overmatch against enemy conventional threats. The ABCT is the formation which contains the most firepower and protection and is the most appropriate formation to fight and/or deter the aggression of states possessing heavy vehicles and tanks. By 2020, the Army intends to retain ten Regular Army ABCTs. Each ABCT has three Combined Arms Battalions with a mixture of tanks

⁶⁰ Donald P. Wright and Timothy R. Reese, *On Point II*, 1st ed. (Fort Leavenworth, KS: Combat Studies Institute Press, 2008), 332.

⁶¹ Donald P. Wright and Timothy R. Reese, *On Point II*, 1st ed., 332.

⁶² McGrath, *An Army at War*, 54.

and Bradley Fighting Vehicles. Each ABCT will also contain an Armored Cavalry Squadron which will include one tank company, additional engineers, and a fires capability. The lethal capabilities of the ABCT includes eighty-seven M1A2 tanks, over 130 Bradley fighting vehicles, as well as eighteen M109A6 155mm self-propelled Howitzers.⁶³ If a major combat operation occurs against conventional forces, such as Russia, then the Army should deploy ABCTs. Currently, the US European Command is relying on 2d Cavalry Regiment, an SBCT and rotational ABCTs to deter Russian aggression in Europe.⁶⁴

A press release from US European Command has stated that it will begin a continuous rotational presence of an ABCT in the European theater to reassure US NATO allies in response to Russia's actions in the Ukraine. The European Reassurance Initiative helps provide flexibility and responsiveness to commanders in the European theater by adding additional combat power to the region.⁶⁵ The additional combat power of an ABCT in Europe on a rotational basis is an indication that the United States feels the 2d Cavalry Regiment is not enough to deter and/or defeat Russian aggression alone. The SBCT has demonstrated that it is useful and necessary for its ability to move long distances quickly throughout the region by conducting multi-national exercises. However, the SBCT's primary role is not destroying Russian vehicular formations.

The SBCT is best employed as a dismounted fighting force and an ABCT is the best formation to fight other vehicles. If the Army wishes to add lethality and protection to the force in order to fight and/or deter Russian mechanized forces, then an ABCT is the more appropriate formation to be permanently stationed in Europe. Permanently stationing an ABCT in Germany

⁶³ Department of Strategic Leader Development, *Army Organization and Employment Data*, 11-12.

⁶⁴ US European Command Public Affairs Office, *European Reassurance Initiative Fact Sheet*, January 5, 2017.

⁶⁵ US European Command Public Affairs Office, *European Reassurance Initiative Fact Sheet*.

in conjunction with the SBCT makes a more lethal and mobile option for the task of deterrence rather than upgrading the infantry carrying vehicle with 30mm. The ABCT is less deployable by airlift than any other formation and by forward positioning those formations, they could be employed in an initial push against Russian forces.⁶⁶

Adding more armor and firepower to the ICV will make the SBCT even heavier than it already is. The addition of slat armor to repel RPGs and double V-hull upgrades already prevents the Stryker from being carried on C-130 aircraft as originally intended.⁶⁷ Making the vehicles heavier could potentially make the overall SBCT more difficult to move by airlift capability.⁶⁸ This is one of the reasons why the “Army Functional Concept for Movement and Maneuver” reinforces the need for each of the three formations of BCTs.⁶⁹ The Army needs all three formations of light, Stryker, and armored infantry to quickly respond to a crisis and execute decisive action. Insufficient strategic lift is a significant limitation on deploying a force. This is an issue that has plagued the Army for multiple generations. Infantry formations, specifically light and Stryker infantry, require the ability to deploy quickly and disembark from strategic lift such as C-17 aircraft before the ABCT can arrive.⁷⁰

Each of the BCTs have their limitations in decisive action. The IBCT is effective in complex terrain, yet its greatest limitation is its mobility. The IBCT formation is necessary for joint forcible entry and quickly seizing key terrain to establish a lodgment for follow-on forces.

⁶⁶ Eric Peltz, John M. Halliday and Aimee Bower, *Speed And Power* (Santa Monica, CA: RAND, 2003), 23-25.

⁶⁷ Buggrabe, “Is The Stryker Brigade Combat Team Still Relevant?,” 41.

⁶⁸ Peltz et al., *Speed And Power*, 26-27.

⁶⁹ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 19.

⁷⁰ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 42-43.

Currently the IBCT lacks a light weight vehicle that provides MPF to repel an enemy counterattack. The CVMS describes the challenges of the SBCT formation as lacking firepower for standoff engagements and protection from anticipated improvements in Improvised Explosive Devices and RPG fires. The limitations of the ABCT are specifically in the current fleet of vehicle's obsolescence. Specifically, the Bradley's armor, sensors, and weapon systems are inadequate compared to the emerging threats of our adversaries.⁷¹ The CVMS strategy identifies the ABCT as having the greatest need for modernization, yet does not prioritize their shortfalls ahead of the IBCT. There are several implications to the Army's planned upgrades to the force in the near, mid, and far term future if anticipated conflicts are against hybrid threats. The relevance of the SBCT, without adding the 30mm upgrade to ICVs and making them more "tank-like," is evident whether viewed through the lens of decisive action in doctrine, original intent for the SBCT, or future threats when compared with other BCT capabilities.

Implications of the Army's Planned Upgrades

The Army recognizes that several of the combat vehicles in its inventory are becoming obsolete and need upgrades. Senior leaders have concerns that the growing capabilities of state actor adversaries will soon outpace the US military capabilities. The "Army Functional Concept for Movement and Maneuver 2020-2040" describes how the Army will maneuver as a part of the joint force to achieve campaign objectives tied to strategic objectives. The purpose of the concept is to provide a common framework for the development of specific capabilities in movement and maneuver from now until 2040.⁷² The concept is expressed through the CVMS, which is the document establishing how the Army will modernize combat vehicles in the near-, mid-, and far-

⁷¹ Training and Doctrine Command, *The US Army Combat Vehicle Modernization Strategy* (Fort Eustis, VA: Training and Doctrine Command, 2015), 8-10.

⁷² *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 1.

term future to add mobility, protection, and lethality requirements to the Army's maneuver formations.⁷³ The Army is in the process of adding 30mm for lethality to the SBCT as part of the initial stages of the CVMS. However, replacing ICVs with IFVs may change the way the SBCT fights on the ground.

TRADOC Pamphlet 525-3-6, "US Army Functional Concept for Movement and Maneuver" describes, movement as "comprising actions associated with deploying forces to an operational area and actions taken throughout the operational area to position forces in preparation for maneuver in relation to enemy forces." It further states, "The amount of force needed within a set amount of time to provide a credible deterrent capable of winning and achieving operational objectives varies by region, adversary, and situation. Thus, the concept supports the Joint Force in achieving a balance between forward positioned forces, rapidly deployable forces, reinforcing forces, and sustainable land combat power adept at integrating capabilities in all domains to assure mission success." Maneuver is the second part of the TRADOC Pamphlet's concept and is the employment of those forces being moved into the operational area.⁷⁴

The TRADOC concept of Movement and Maneuver builds upon the Army Operating Concept, "Win in a Complex World," and includes several assumptions necessary to plan the employment of ground combat vehicles and BCTs in the future operating environment. Many of these assumptions demonstrate the need for the SBCT to continue to fight as a dismounted infantry force and for the Stryker to remain a carrying vehicle rather than a fighting vehicle. The first assumption is that the future operating environment will be in complex terrain and among

⁷³ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 7.

⁷⁴ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 7.

urban populations. Other assumptions, to include the size of forces, further validate the need for the SBCT to fight as a dismounted force.⁷⁵

The concept further highlights areas of risk when applying the concept in the future. The two risks that are most pertinent to changing the SBCT involve available resources and readiness. Funds are not endless, and the Army requires a sufficient budget to achieve overmatch against America's future adversaries. The Movement and Maneuver concept states that mobile protected firepower is predominately a capability required for the ABCT.⁷⁶ The Army's CVMS discusses the ends, ways, and means on how to implement the mobility, protection and lethality throughout the force.

The CVMS describes its "ends" as "Army BCTs possess the lethality, mobility, and protection to achieve overmatch during joint expeditionary maneuver and joint combined arms operations." The "ways" draws from the Army's Operating Concept and the future operating environment. The Army plans to evaluate trends in new technologies and continue to adapt to emerging threats. Continued innovation is required to introduce new ideas that will have lasting outcomes for the force. Prioritization of resources is critical to the modernization plan. The Army must develop new ideas to use off-the-shelf technology to reduce funds. The "means" for the strategy includes sustaining current vehicles, improving existing systems, developing new capabilities, and replacing obsolete vehicles. Then the Army will assess new technologies and concepts through doctrine, organization, training, materiel, leadership, personnel, facilities, and policy (DOTMLPF-P) to link the ways and means of modernization to achieve force

⁷⁵ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 8.

⁷⁶ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 42.

development.⁷⁷ The CVMS assesses each of the BCTs and the shortfalls based on the gaps identified by senior leaders and the needs of the future operating environment.

The CVMS identifies a common operational gap in mobility, lethality, and protection in all three of the BCTs. The following table is a snapshot of MPF into the future:

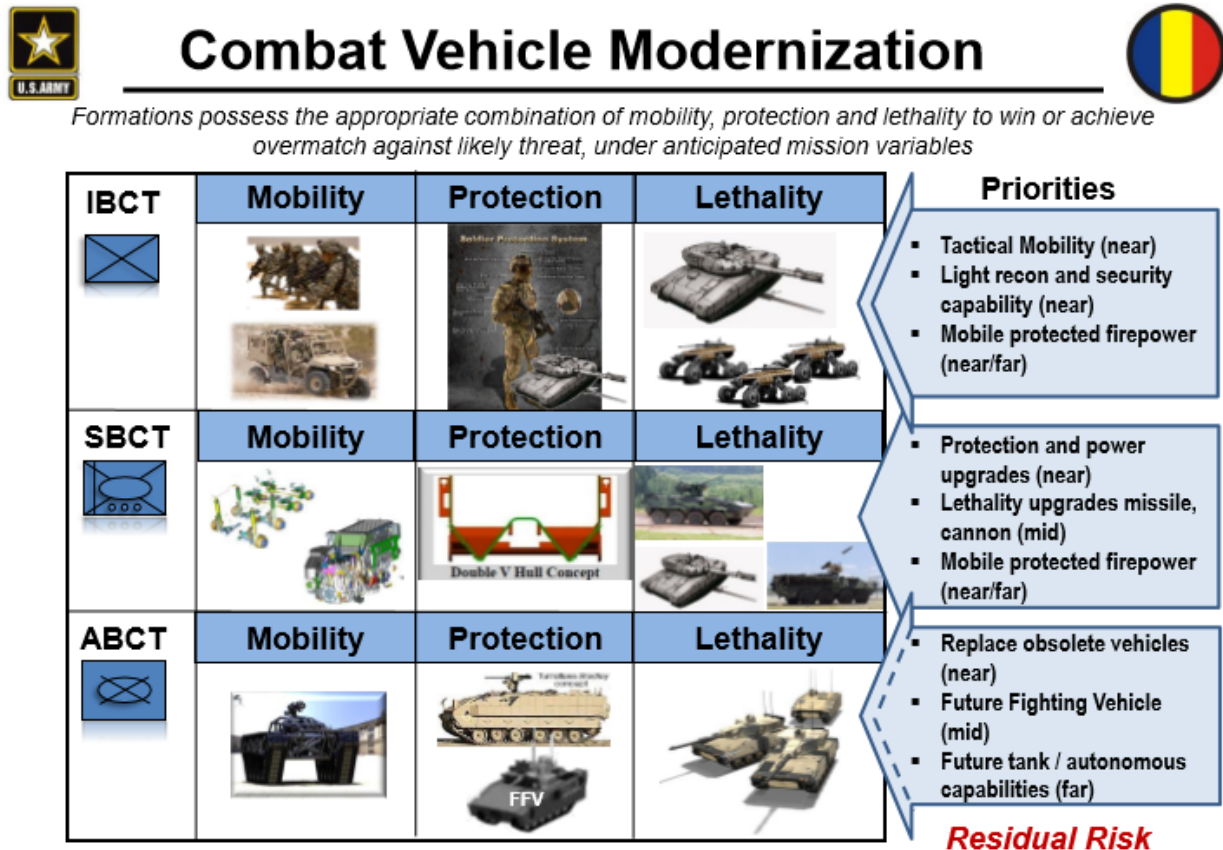


Figure 1. Combat Vehicle Modernization

Source: Data from COL William Chlebowski, “AUSA 2016 Global Force Symposium and Exposition” (Maneuver, Aviation and Soldier Division, Army Capabilities Integration Center, March 15-17, 2016), Powerpoint presented at Von Braun Center, Huntsville, AL, slide 14.

Just because the Army admits an operational risk in finding solutions, does not mean it will not contradict itself in the same document by resolving the issue with answers directly

⁷⁷ The US Army Combat Vehicle Modernization Strategy, 4-5.

counter to the root of the problem it is trying to solve. Furthermore, the CVMS recognizes that no combat vehicle system can perform all missions well, even going as far to state that “the Army should reject a one-size-fits-all approach” to modernization.⁷⁸ Yet, the outcome depicted in Figure 2 looks like that is exactly what the strategy is eventually going to accomplish.

Since 9/11, the modernization of combat vehicles has been focused on Iraq and Afghanistan deployments where counterinsurgency operations were the primary mission. However, combat modernization is not a new concept. Both the FCS and Ground Combat Vehicle (GCV) were cancelled within the last ten years and were unable to deliver new upgrades to the force.⁷⁹ Although both concepts were different than the CVMS, several lessons should be taken from the previous failed programs. Tanks are good for lethality, but they do not necessarily solve the issues of mobility and maneuvering dismounted. The document mentions the FCS as a failed program, yet both programs have attempted to fight future wars with a universal tool. In the FCS, the tool was the medium size vehicle. In the CVMS it is the MPF concept or tank; a vehicle which was recently nearly written off as a legacy in need of retirement.⁸⁰

The CVMS identifies several of the shortfalls that have already been discussed in the Army Functional Concept for Movement and Maneuver and establishes a strategy on how to modernize combat vehicles to fill the operational gaps. The themes of the environment, threats, and need for upgraded BCT capability are consistent through both the functional concept and the CVMS. However, the upgrades of 30mm to the SBCTs specifically is counter to the requirements identified in both documents. It also further confuses whether the SBCT should fight and train as a mounted or dismounted force.

⁷⁸ *The US Army Combat Vehicle Modernization Strategy*, 14.

⁷⁹ *The US Army Combat Vehicle Modernization Strategy*, 3.

⁸⁰ Gott, *Breaking the Mold*, xi.

The Army is in the process of fielding the 30mm upgrade to the Stryker for additional lethality in response to the ONS submitted by the 2nd Cavalry Regiment in Germany. The MPF concept also includes double V-hull upgrades to the Stryker vehicles for added protection against IEDs and mines. However, the SBCT is not designed to be a fleet of fighting vehicles. The formation does not consist of the mobile protected firepower which is characteristic of the ABCT nor should it because making the carrying vehicle into a fighting vehicle changes how the vehicle fights. The vehicle lacks the armor to attempt to fight mechanized vehicles in the offense. If the Stryker must fight vehicles, then it should be as a last resort.

The ONS for the 30mm upgrade was submitted by the only vehicular BCT permanently stationed in Europe and it was generated in response to Russian aggression. The Army states that it does not plan on changing how the Stryker ICV fights. The Army claims that the planned 30mm upgrade is only to add more lethality for the support of dismounted maneuver and to add greater standoff distances during engagements.⁸¹ Yet if the most likely terrain that the SBCT will be employed in is an urban environment and they are not intended to fight vehicles, then the conclusion should be that the 30mm is not worth the Army's time or money. Furthermore, civilian casualties during a counterinsurgency creates more enemies. A hybrid threat will fight among the populations where collateral damage and civilian casualties will have to be taken into consideration prior to using lethal force.⁸² Therefore, a 30mm on every other Stryker either will exacerbate the problem by causing more collateral damage and civilian casualties or will be another weapon system the infantry squad cannot use due to the force trying to prevent collateral damage.

⁸¹ Christian Sheehy, "Filling the Lethality Gap: The Stryker Readies for Additional Firepower with Enhancements to Gun and Turret," *Armor & Mobility* (September 2014), 6.

⁸² John Matsumura et al., *Exploring Advanced Technologies for The Future Combat Systems Program* (Santa Monica, CA: RAND, 2002), 70.

The overmatch of the Stryker in decisive action is its speed and carrying capacity and will never be its firepower tied to a mounted platform. More lethality and protection is better achieved by a different fighting vehicle or by an integrated armored force. Additionally, the Stryker will not be lighter nor more mobile if the Army wishes the vehicle to become heavier and adds a turret with a larger weapon system.

Heavier vehicles with more firepower on every other Stryker is going in the opposite direction of the expeditionary critical requirement. The 30mm upgrade makes the SBCT heavier; and it will probably require more lift assets for sustainment and maintenance. Furthermore, it begs the question why the Army would want to upgrade the Stryker with a capability that is better suited for the ABCT's role. If the Army invests in 30mm upgrades for Stryker ICVs, then it is not appropriately prioritizing funds for the very formation that requires the most modernization: the ABCT. This is not the first time the Army has taken short cuts and attempted to upgrade lethality to support the infantry to the detriment of lives and capability of new weapon systems.

During WWII the M4 Sherman was the Army's primary tank. It was easy to manufacture and reliable.⁸³ US Army tank doctrine at the time viewed the medium tank as an Infantry support vehicle not intended to take on German tanks. It was supposed to achieve a break-through against enemy forces and then exploit their rear while pursuing the beaten opponent. According to American doctrine, the M-3 or M-6 mounted anti-tank guns were supposed to fight the enemy's tanks. Eventually the tank destroyers evolved into the M-10 or M-18 which were lightly armored vehicles with turrets designed to ambush and destroy attacking enemy tanks. This concept was flawed as the M-10 lacked overhead protection, had very thin armor on its sides and was a sort of hybrid tank called upon to conduct missions it was unequipped to do. Therefore, the Sherman had

⁸³ Training and Doctrine Command, *The US Army Combat Vehicle Modernization Strategy*, 2.

to change its tactics to counter the overmatch of the German Panzer V and VI tanks.⁸⁴ Although the American Army was ultimately successful in the outcome of the War, three to four Shermans were lost to every German tank destroyed. The Sherman tank and tank destroyer are a historical perspective on why there is a need for light, medium, and armored capabilities. The CVMS admits this but then uses the Sherman example to justify modernization by making more vehicles into tank-like vehicles.⁸⁵ Hence, mobile protected firepower should be invested in, but not at the expense of prioritizing funds on a potentially flawed concept of adding 30mm upgrades to an ICV.

The same dichotomy of ICV or IFV was addressed in the development of the Bradley Fighting Vehicle. The Army's process of mechanization would make infantry vehicles more specialized and integrated with tank forces. Doctrine and history would say that the mechanized force is a body of infantrymen who happened to be issued armored vehicles. Yet, other leaders argued that they are a vehicle crew that must be prepared to dismount in some situations. The Bradley concept led to issues of greed for certain capabilities and ultimately made the vehicle sufficient for some things, but not superior for anything.⁸⁶ The Bradley Fighting Vehicle was another example of the "one-size-fits-all" solution that was actually implemented into the force and is now reaching obsolescence.

The Army is trying to make the Stryker into something it admits it was not designed to do and the transformation is not cheap. Since the ONS in 2015 the Army has spent over \$500 million

⁸⁴ Robert Citino, *Armored Forces: History and Sourcebook* (Westport, CT: Greenwood Press, 1994), 89.

⁸⁵ Training and Doctrine Command, *The US Army Combat Vehicle Modernization Strategy*, 2.

⁸⁶ W. Blair Haworth, *The Bradley And How It Got That Way* (Westport, CT: Greenwood Press, 1999), 2-3.

dollars on the weapon system upgrades.⁸⁷ This money could have been invested in the other aspects of the CVMS or other procurement initiatives such as better equipment and weapons for the dismounted infantryman. The need for mobile protected firepower should be achieved through integration of capabilities between the other BCTs rather than changing a platform with an expensive flawed concept. The House and Armed Service Committees are justified in their concerns for adding a broad Stryker lethality package. The upgrade to the 30mm across the SBCT will most likely add billions of dollars to an already stretched combat modernization strategy. Even though Russia has resurfaced as a threat in Europe, the quick solution may be a decision that the Army cannot afford.⁸⁸

Conclusion

The SBCT's role in decisive action is to remain the medium force that can move quickly by means of a light armored vehicle and fight dismounted in complex terrain. The MPF concept leads the Army into pitfalls and the possibility of sunk costs by trying to fill the operational gap of lighter, more mobile, protected, and lethal vehicles with more armored and tank-like systems. This antidote of adding the 30mm to the ICV is counter to the very root of the problems and threats which Army Senior leaders have identified in the future operating environment. If the army needs more firepower in decisive action, then they should invest in a better fighting vehicle or tank to replace the Bradley and Abrams. Upgrading the Strykers with a 30mm is money better spent on a heavier vehicle for the heavier formation. The strength of the SBCT is in its ability to deliver the dismounts to the fight. Additionally, the .50 caliber causes less collateral damage in an

⁸⁷ Department of Defense, *Fiscal Year (FY) 2017 President's Budget Submission Army Justification Book of Procurement Of W&TCV* (2016), 9.

⁸⁸ Sydney Freedberg Jr., "Strykers: Hill Oks \$411M, With A Warning," *Breaking Defense*, October 1, 2015, accessed March 29, 2017, <http://breakingdefense.com/2015/10/strykers-hill-oks-411m-with-a-warning/>.

urban population and can still support the dismounts with suppressive fire. The vehicle is not meant to kill other vehicles, and it is not a fighting vehicle. Investing in the upgrade to the 30mm only widens the gap between our light infantry mobility and the lethality of the armored force.

This conclusion is supported by analyzing the original reason the Army designed the SBCT with its ICV. The SBCT continues to fill the role of regular/medium infantry. The SBCT continues to meet the capability of fighting as dismounted infantry in complex terrain. Analysis of how the Stryker was used in counterinsurgency operations demonstrates its continued relevance in future warfare.

The future operating environment is uncertain and complex; therefore, Army forces must be prepared to conduct decisive action against a various range of threats to include conventional, irregular, and hybrid forces. Future warfare is anticipated to be among populations in complex terrain, most likely large cities with narrow streets and large multi-story buildings. Senior leaders suggest that our future formations must be mobile and must maneuver dispersed.⁸⁹ The future also calls for combat vehicles that have high mobility, low maintenance, are light weight and cost efficient. Yet the Army's solution is more lethality and protection.⁹⁰ Past conflicts have illustrated the need for the three types of Infantry; light, regular, and armored in order to be successful in decisive action. Each one of the current BCT formations has strengths and weaknesses in its capabilities, and the Army should invest wisely to enhance these capabilities rather than degrade them.

The very solution of adding the 30mm seems to be counter to solving problems of the future. The Army does need to invest in vehicles that are more lethal and have more protection. Its vehicle modernization program resembles an attempt to replace the ICV with light tanks or

⁸⁹ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 12.

⁹⁰ *Ibid*, 20.

fighting vehicles. The Army must be able to prioritize its needs based on budget constraints and the capabilities required to defeat the enemy of the future.

The Army recognizes the capabilities of all three BCTs but needs to use the appropriate tool for the problems it faces. Senior leaders should accept that there is no universal tool or investment that will be able to defeat every threat. Permanently moving an ABCT to Europe is a better option than slapping a 30mm on the Strykers and expecting it to deter or defeat the Russians. The Stryker is relevant because it is the system that currently can solve the problems of mobility and protection for the infantryman.

The Army should find innovative ways to enhance the capabilities of the SBCT as a dismounted fighting force in the future operating environment. Adding the 30mm to every other Stryker widens the gap between light infantry and mobile/regular infantry forces by making them heavier and more expensive. Modularity has limited the BCT's ability to achieve true combined arms throughout all three formations. The Army must find ways to achieve overmatch against future threats and be able to rapidly deploy combined arms forces to seize and control terrain, defeat or destroy enemy forces, and protect populations to achieve military objectives.⁹¹

If the US Army must be able to "Win in a Complex World," then speed of deployment must be made a priority. This priority includes making maneuver forces lighter and being able to move by air at the operational and tactical levels. Additionally, maneuver forces must be able to project combat power with essential enablers that allow units to see, move, shoot, and communicate at the tactical level.⁹² The Army must find ways to innovate, improve, and invest

⁹¹ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 7.

⁹² Scales, *Yellow Smoke*, 143-161. Scales identifies ten principles for strengthening the land force in chapter 9 which include several other recommendations. Only the principles related to the vehicle modernization program were listed as it applies to the topic of this paper and the SBCT.

wisely in order to achieve sustained modernization in the future.⁹³ This effort will include forward positioning of forces most appropriate for the threat and operating environment of likely conflicts and being able to sustain these forces through joint capability.⁹⁴ The Army should continue to invest in low-cost capabilities for the dismounted Soldier as conflicts cannot be won without the dismounted infantryman. Army forces lack lethality, protection, and mobility and MPF is the concept that is designed to help fill the operational gap as the Army attempts to modernize its fleet of combat vehicles for future warfare. The Army should invest in MPF; however, it should not be at the expense of compromising capabilities that make each of the three formations of BCTs unique and necessary.

The Army wishes to add more lethality to forces in Europe to deter Russian aggression. The Army should consider moving a minimum of one ABCT to be permanently stationed in Europe. This solution will be costly but should be weighed against the alternative of mobilizing ABCTs into the region on a rotational basis. The SBCT cannot defeat an initial push of Russian forces into the Baltic States alone, even if they have 30mm added to every Stryker. Forward positioning of an ABCT will shorten the response time of deployment for heavy forces for conflicts in Europe and contingency operations in the Middle East.⁹⁵

The SBCT lacks firepower at the company level after the cancellation of the MGS Stryker. The Army stopped production of the vehicle after only buying 142 of the variants.⁹⁶ If

⁹³ Dr. Daniel Goure, “Two Questions the Commission Needs to Answer” (*Testimony Before the National Commission on The Future of The Army*, October 22, 2015), 2, accessed March 15, 2017, <http://www.ncfa.ncr.gov/sites/default/files/Statement%20of%20Dr.%20Daniel%20Goure--October%2022%2C%202015.pdf>.

⁹⁴ *The US Army Functional Concept for Movement and Maneuver 2020-2040*, 43.

⁹⁵ Association of the United States Army, “Scaparrotti Favors Permanent ABCT For Europe,” accessed March 30, 2017, <https://www.ausa.org/news/scaparrotti-favors-permanent-abct-europe>.

⁹⁶ David Axe, “The Wheeled Cannon That Everyone Hates,” *War Is Boring*, June 28, 2014, accessed March 30, 2017, <https://warisboring.com/the-wheeled-cannon-that-everyone-hates-d5e6d22bdfcc>.

the Army wishes to add more firepower to SBCTs then the 30mm option has potential as an enabler, but not at the expense of replacing the ICV. Reorganizing the SBCT force structure with 30mm to replace the original MGS platoons is an option or adding the vehicles as a battalion asset could give commanders the option for more firepower if the situation is appropriate. However, the Army should not add the 30mm option to the entire SBCT force because it defeats the unique functionality of the SBCT ICV where it then becomes more akin to an IFV suited to fighting vehicles in combat. Continued research in a lighter or autonomous system with more firepower could reduce the expense and weight of armor needed to protect a vehicle crew. This technology would be more in the far term, but it does not contradict the need for lighter forces and would not replace the capabilities/tactics of the necessary ICV.⁹⁷ The SBCT's role in decisive action is to remain the medium force that can move quickly by means of a light armored vehicle and fight dismounted in complex terrain.

⁹⁷ Goure, "Two Questions the Commission Needs to Answer," 5. Dr. Goure mentions such autonomous systems are currently fantasy with budget constraints, however the military is researching robotics and technology. This was used as an example of far term potential solution.

Bibliography

- Army Doctrine Publication 3-0, *Operations*. Washington, DC: Government Printing Office, 2016.
- Army Doctrine Publication 3-0, *Unified Land Operations*. Washington, DC: Government Printing Office, 2011.
- Army Doctrine Reference Publication 3-0, *Operations*. Washington, DC: Government Printing Office, 2016.
- Association of the United States Army. "Scaparrotti Favors Permanent ABCT for Europe." Accessed March 30, 2017. <https://www.ausa.org/news/scaparrotti-favors-permanent-abct-europe>.
- Axe, David. "The Wheeled Cannon That Everyone Hates." *War Is Boring*, June 28, 2014. Accessed March 30, 2017. <https://warisboring.com/the-wheeled-cannon-that-everyone-hates-d5e6d22bdfcc>.
- Barno, David W., and Nora Bensahel. *The Future of The Army*. Washington, DC: Atlantic Council, 2016.
- Benson, Bill. "Unified Land Operations: The Evolution of Army Doctrine for Success in the 21st Century." *Military Review*, XCII, no. 2 (April-May 2012): 47-57.
- Burggrabe, LTC Reed A. "Is the Stryker Brigade Combat Team Still Relevant." Monograph, Command and General Staff College, 2016.
- Charlston, Jeffery, and Mark Reardon. *From Transformation to Combat: The First Stryker Brigade at War*. Washington, DC: Center of Military History, 2007.
- Citino, Robert. *Armored Forces: History and Sourcebook*. Westport, CT: Greenwood Press, 1994.
- Department of Strategic Leader Development. *Army Organization and Employment Data*. Carlisle Barracks, PA: US Army War College, 2017.
- Department of the Army. *Department of Defense, Fiscal Year (FY) 2017 President's Budget Submission: Army Justification Book of Procurement to W&TCV*. 2016. Accessed March 29, 2017. <https://www.asafm.army.mil/Documents/OfficeDocuments/Budget/budgetmaterials/fy17/pforms/wtcv.pdf>.
- Department of Defense. *Fiscal Year (FY) 2017 President's Budget Submission Army Justification Book of Procurement Of W&TCV*, 2016.
- Field Manual (FM) 3-0, *Operations*. Washington, DC: Government Printing Office, 2001.
- Field Manual (FM) 3-0, *Operations Change 1*. Washington, DC: Government Printing Office, 2001.

- Field Manual (FM) 3-24, *Counterinsurgency*. Washington, DC: Government Printing Office, 2006.
- Field Manual (FM) 3-96, *Brigade Combat Team*. Washington DC: Government Printing Office, 2015.
- Freedberg Jr., Sydney. "Strykers: Hill OKs \$411M, With a Warning." *Breaking Defense*, October 1, 2015. Accessed March 29, 2017. <http://breakingdefense.com/2015/10/strykers-hill-oks-411m-with-a-warning/>.
- . "The 30 Millimeter Solution: Army Upgunning Strykers vs. Russia." *Breaking Defense*, April 23, 2015. Accessed March 14, 2017. <http://breakingdefense.com/2015/04/the-30-millimeter-solution-army-upgunning-strykers-vs-russia/>.
- Gott, Kendall D. *Breaking the Mold: Tanks in the Cities*. Fort Leavenworth, KS: Combat Studies Institute Press, 2006.
- Goure, Dr. Daniel. "Two Questions the Commission Needs to Answer." Testimony Before the National Commission on the Future of the Army, October 22, 2015. Accessed March 15, 2017. <http://www.ncfa.ncr.gov/sites/default/files/Statement%20of%20Dr.%20Daniel%20Goure--October%2022%2C%202015.pdf>.
- Haworth, W. Blair. *The Bradley And How It Got That Way*. Westport, CT: Greenwood Press, 1999.
- Joint Chiefs of Staff. "The National Military Strategy of The United States of America 2015." Accessed March 16, 2017. http://www.jcs.mil/Portals/36/Documents/Publications/2015_National_Military_Strategy.pdf.
- Krippel, Steve, and Chris Ricci. "The Stryker Brigade Combat Team: America's Early Entry Force." *Infantry*, July-September 2014. Accessed April 28, 2017. <http://www.benning.army.mil/infantry/magazine/issues/2014/Jul-Sep/pdfs/Krippel.pdf>.
- Maneuver, Aviation, and Soldier Division Army Capabilities Integration Center. *The US Army Combat Vehicle Modernization Strategy*. Fort Eustis, VA: Government Printing Office, 2015.
- Matsumura, John, Randall Steeb, Thomas J. Herbert, John Gordon IV, Carl Rhodes, Russell W. Glenn, Michael Barbero, Frederick J. Gellert, Phyllis Kantar, Gail Halverson, Robert Cochran, and Paul Steinberg. *Exploring Advanced Technologies for the Future Combat Systems Program*. Santa Monica, CA: RAND, 2002.
- Matthews, Matt. *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War*. Fort Leavenworth, KS: Combat Studies Institute, 2008.
- McGrath, John. *An Army at War: Change in the Midst of Conflict*. Fort Leavenworth, KS: Combat Studies Institute Press, 2005.

- Peltz, Eric, John M. Halliday and Aimee Bower. *Speed And Power*. Santa Monica, CA: RAND, 2003.
- Scales, Robert H. *Scales on War: The Future of America's Military at Risk*. Annapolis, MD: Naval Institute Press, 2016.
- . *Yellow Smoke: The Future of Land Warfare for America's Military*. Lanham, MD: Rowman and Littlefield Publishers, 2003.
- Sheehy, Christian. "Filling the Lethality Gap: The Stryker Readies For Additional Firepower with enhancements to gun and turret." *Armor & Mobility* (September 2014): 6.
- Singer, P. W. *Wired For War*. New York: Penguin Books, 2009.
- Spencer, John. "It's Time to Create a Megacities Combat Unit." *RealClear Defense*, January 31, 2017. Accessed March 23, 2017. http://www.realcleardefense.com/articles/2017/01/31/its_time_to_create_a_megacities_combat_unit_110717.html.
- TRADOC Pamphlet 525-3-0, *The Army in Joint Operations: The Army's Future Force Capstone Concept 2015-2024, Version 2.0*. Fort Eustis, VA: Training and Doctrine Command, 2005.
- TRADOC Pamphlet 525-3-6, *The US Army Functional Concept for Movement and Maneuver 2020-2040*. Fort Eustis, VA: Training and Doctrine Command, 2017.
- Training and Doctrine Command. *The US Army Combat Vehicle Modernization Strategy*. Fort Eustis, VA: Training and Doctrine Command, 2015.
- US Army National Training Center Operations Group. *Training for Decisive Action: Stories of Mission Command*. Fort Leavenworth, KS: Combat Studies Institute, 2014.
- US Army Center of Military History. *Changing An Army: An Oral History Of General William E. DePuy*. Washington DC: Government Printing Office, 2017.
- US European Command Public Affairs Office. "European Reassurance Initiative Fact Sheet." January 5, 2017.
- Vick, Alan, David T. Orletsky, and Bruce R. Pirnie. *The Stryker Brigade Combat Team: Rethinking Strategic Responsiveness and Assessing Deployment Options*. Santa Monica, CA: RAND, 2002.
- Wass de Czege, Huba. "Three Kinds of Infantry." *Infantry* 75, no. 4 (July-August 1985): 11-13.
- White House. *A National Security Strategy for a New Century*. Washington, DC: The White House, 2009. Accessed December 2, 2016. <http://nssarchive.us/NSSR/2000.pdf>.
- Wright, Donald P. and Timothy R. Reese. *On Point II*, 1st ed. Fort Leavenworth, KS: Combat Studies Institute Press, 2008.